1.6.2 Practice: Properties of Lines Practice Name: Isaiah Singh Date: 5/12/2020

ALS Math for College Readiness Sem 2 *Points Possible:* 25

Answer the following questions using what you've learned from this lesson. Write your responses in the space provided.

1. Use the equation in standard form to answer the following questions.

$4x + 5y = 20$

Part I. Find the *x*- and *y*-intercepts of the equation. Write your answers as ordered pairs. Show your work. **(4 points)**

Answer:

x-intercept: (5, 0)

y-intercept: (0,4)

The x- and y-intercepts of a function are the points that the line crosses the x- and y-axes.

We know that when the line is crossing the x-axis, the y-value has to be 0.

So let's use this, and the equation, to help us find the x-intercept.

Plug in 0 for y; this will help us find the x.

$4x + 5(0) = 20$

$4x + 0 = 20$

$4x = 20$

$x = 5$

Now we know that the line crosses the x-axis at x = 5. The intercept is (5, 0) because we already knew that y = 0.

We also know that when the line is crossing the y-axis, the x-value has to be 0.

So let's use this, and the equation, to help us find the y-intercept.

Plug in 0 for x; this will help us find the y.

$4(0) + 5y = 20$

$0 + 5y = 20$

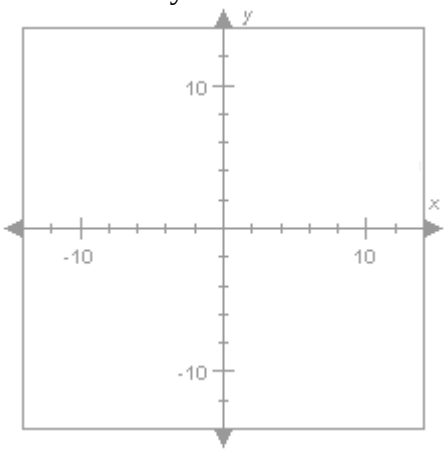
5y = 20

y = 4

Now we know that the line crosses the y-axis at x = 4. The intercept is (0, 4) because we already knew that x = 0.

You can substitute these (5, 0) and (0, 4) back into the equation to make sure they fit, or graph the equation and make sure the points are correct.

Part II. Use your answers from Part I to graph. **(3 points)**



Part III. Calculate the slope of the line $4x + 5y = 20$ using the *x*- and *y*-intercepts. **(2 points)**

Answer: **The slope of the line representing the equation 4x - 5y = 20 is (4/5) and the y-intercept is -4.**

Part IV. Write the equation $4x + 5y = 20$ in slope-intercept form. **(2 points)**

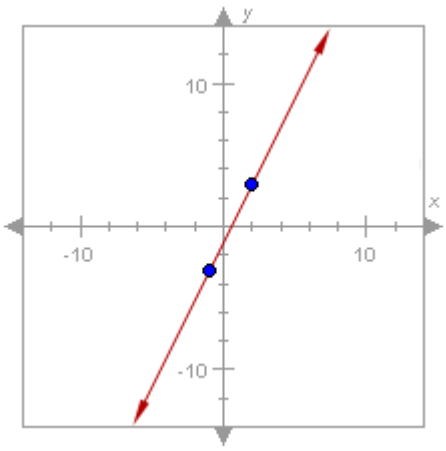
Answer: **y= 4/5x - 4**

2. Solve the equation for *k*. Hint: First multiply both sides by 2. **(4 points)**

$$\frac{2mk + 2j}{2} = n + p$$

Answer: j = n + p - mk

3.



Part I. Calculate the slope of the line shown above. Show your work. **(2 points)**

Answer: **(0,0)**

Part II. Write the equation in point-slope form. Show your work. **(2 points)**

Answer: 1/3

Part III. Write the point-slope equation of the line from Part II in slope-intercept form. Show your work. **(4 points)**

Answer: **y = 1/3**

Part IV. Write the slope-intercept equation of the line from Part III in standard form. Show your work. **(2 points)**

Answer: **y= 4/5x - 4**